Correspondence
Item No. 2a
Newport Banning Ranch
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Vernal Pools/Seasonal Wetlands of the Banning Ranch Mesa

A Rebuttal to the Vernal Pool Topical Response of the draft Environmental Impact Report for the proposed Banning Ranch development

First Edition

6/15/12

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Vernal Pool/Seasonal Wetland #9 (documented to contain the Federally-listed San Diego fairy shrimp)

Photo dated 12/23/10

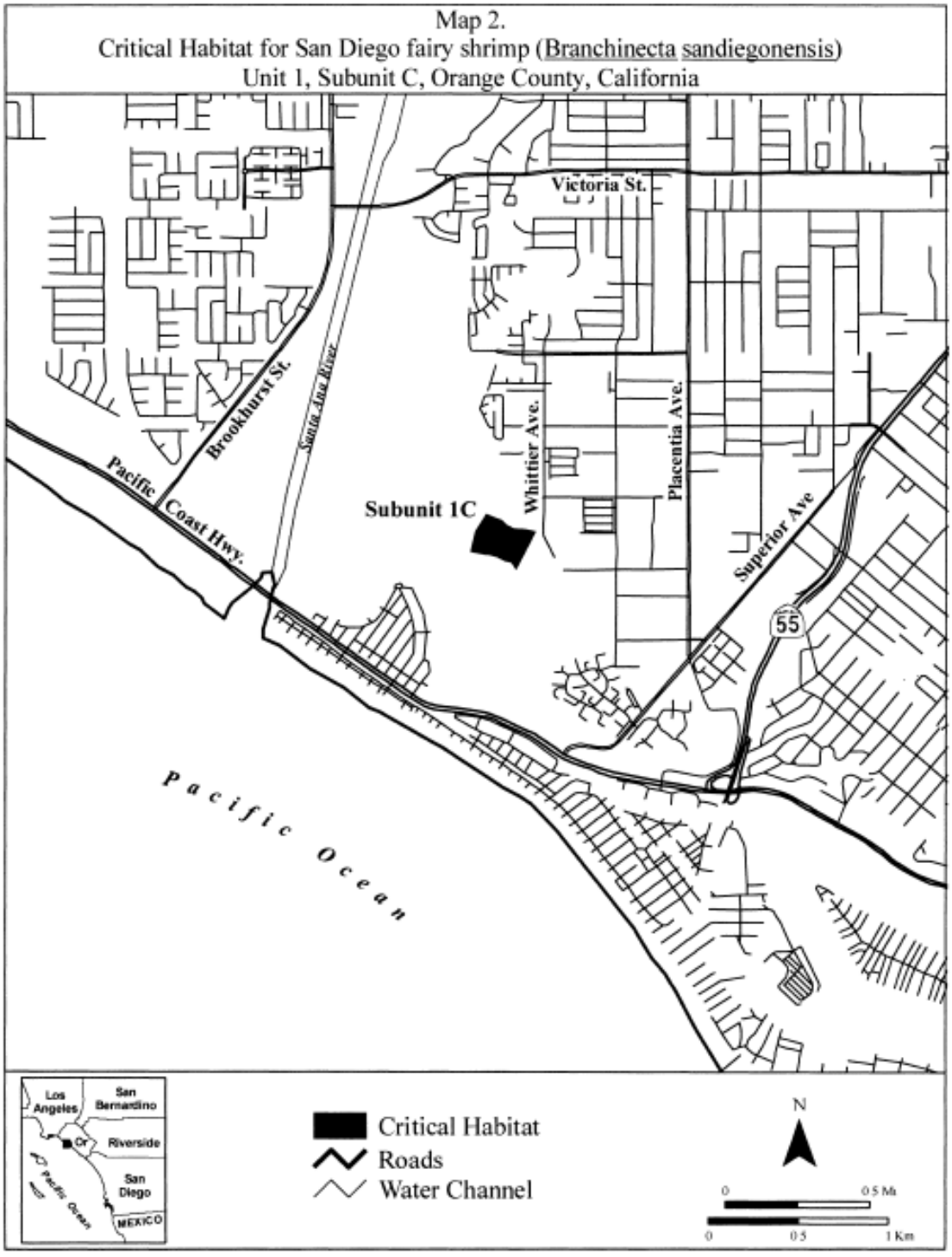
1. Introduction

In an attempt to allow for a much larger developmental footprint than should otherwise be considered, the draft Environmental Impact Report (dEIR) for the 1375 home residential development proposed by Newport Banning Ranch LLC (NBR) purposefully and intentionally underestimates the number of vernal pools/seasonal wetlands on the Banning Ranch mesa through a combination of misrepresentation of the recommended guidelines and a failure to conduct the necessary surveys. As a result, the dEIR is inadequate as a document under CEQA.

2. Background

Extensive vernal pool habitat once occurred on the coastal plain of Los Angeles and Orange counties (Mattoni and Longcore 1997). These days, the Banning Ranch mesa contains one of the last coastal vernal pool complexes in Orange County. With its relatively flat topography and its clay soils serving as an aquatard, the Banning Ranch mesa is an ideal site for coastal vernal pools/seasonal wetlands. Vernal pools/seasonal wetlands on the Banning Ranch mesa, as well as the near-by Fairview Park mesa, are the only two vernal pool complexes in Orange County containing the Federally-listed San Diego fairy shrimp. In fact, the Banning Ranch mesa represents the most northern extent of this endangered species. The USFWS has declared a 15-acre area of vernal pools on the Banning Ranch mesa to be critical habitat for the San Diego fairy shrimp. The Federal Register (Vol. 72, No. 238, 12/12/07) notes that the vernal pool complex on the Banning Ranch mesa "contains all the essential features essential to the conservation of the species."

http://www.gpo.gov/fdsys/pkg/FR-2007-12-12/pdf/07-5972.pdf#page=1



Map of 15-acre USFWS critical habitat area for San Diego fairy shrimp

The vernal pools/seasonal wetlands of the Banning Ranch mesa are also home to the versatile fairy shrimp as well as other invertebrates such as Ostracods (seed shrimp) and Cladocera species (water fleas). Polywogs have been documented in the vernal pools/seasonal wetlands of the Banning Ranch mesa. Birds and mammals, including coyotes, have also been documented to utilize the vernal pools/seasonal wetlands of the Banning Ranch mesa.

3. Vernal Pools/Seasonal Wetlands on the Banning Ranch mesa have adapted to development of the oil field

Like nearly all of the Southern California coast, the Banning Ranch mesa has seen development (though less than most areas due to the fact that for the last 80 years Banning Ranch has served as an oilfield, with only a relatively small crew of oil workers coming and going everyday). The vernal pools/seasonal wetlands on the Banning Ranch mesa have adapted to the oil operation. No longer present on a pristine coastal mesa, the vernal pools/seasonal wetlands are now next to oil wells/platforms, service roads, and other oil field features. Some vernal pools/seasonal wetlands are now on top of buried asphalt parking lots. In some cases, the geographical location of individual vernal pools/seasonal wetlands has shifted as the oil field operation has physically changed the focal terrain.

Still, the vernal pools/seasonal wetlands persist to this day. They remain the last along the Orange County coast, and their preservation should remain a goal of all wildlife regulatory agencies.

4. Attempts by the dEIR to exclude the vernal pools/seasonal wetlands as *wetlands* are disingenuous.

The dEIR states,

> "Given the lack of wetland hydrology……..during the normal rainfall years of 2007/2008 and 2008/2009, these areas would not be considered wetlands even under the methodology used by the Coastal Commission."

The dEIR suggests that data from 2009/2010 and 2010/2011 should be excluded from being used to determine wetland hydrology. The dEIR claims its authority from page 95 of the **2008**

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: **Arid West Region (Version 2.0**), which states,

Direct hydrologic observations. Verify that the plant community occurs in an area subject to prolonged inundation or soil saturation during the growing season. This can be done by visiting the site at 2- to 3-day intervals during the portion of the growing season when surface water is most likely to be present or water tables are normally high. Hydrophytic vegetation is considered to be present, and the site is a wetland, if surface water is present and/or the water table is 12 in. (30 cm) or less from the surface for 14 or more consecutive days during the growing season during a period when antecedent precipitation has been ***normal or drier than normal****. If necessary, microtopographic highs and lows should be evaluated separately. The* ***normality*** *of the current year's rainfall must be considered in interpreting field results, as well as the likelihood that wet conditions will occur on the site at least every other year.*

A. Normal vs. average.

While the 2008 Army Corps manual does stress consideration of the "normality" of the current year's rainfall, it is important to understand that ***normal*** does not equal ***average (a.k.a. mean)***. For example, the ***average*** height of a woman in the USA is 5'5". This does not mean a woman who is 5'6" is ***abnormal***. Rather, ***normality*** is a ***range*** on either side of the ***mean***. In many cases, this would be ***one standard deviation*** on either side of the ***mean.*** The ***standard deviation*** can be thought of as the "mean deviation from the mean," and is expressed mathematically as:

The **sample standard deviation formula** is:

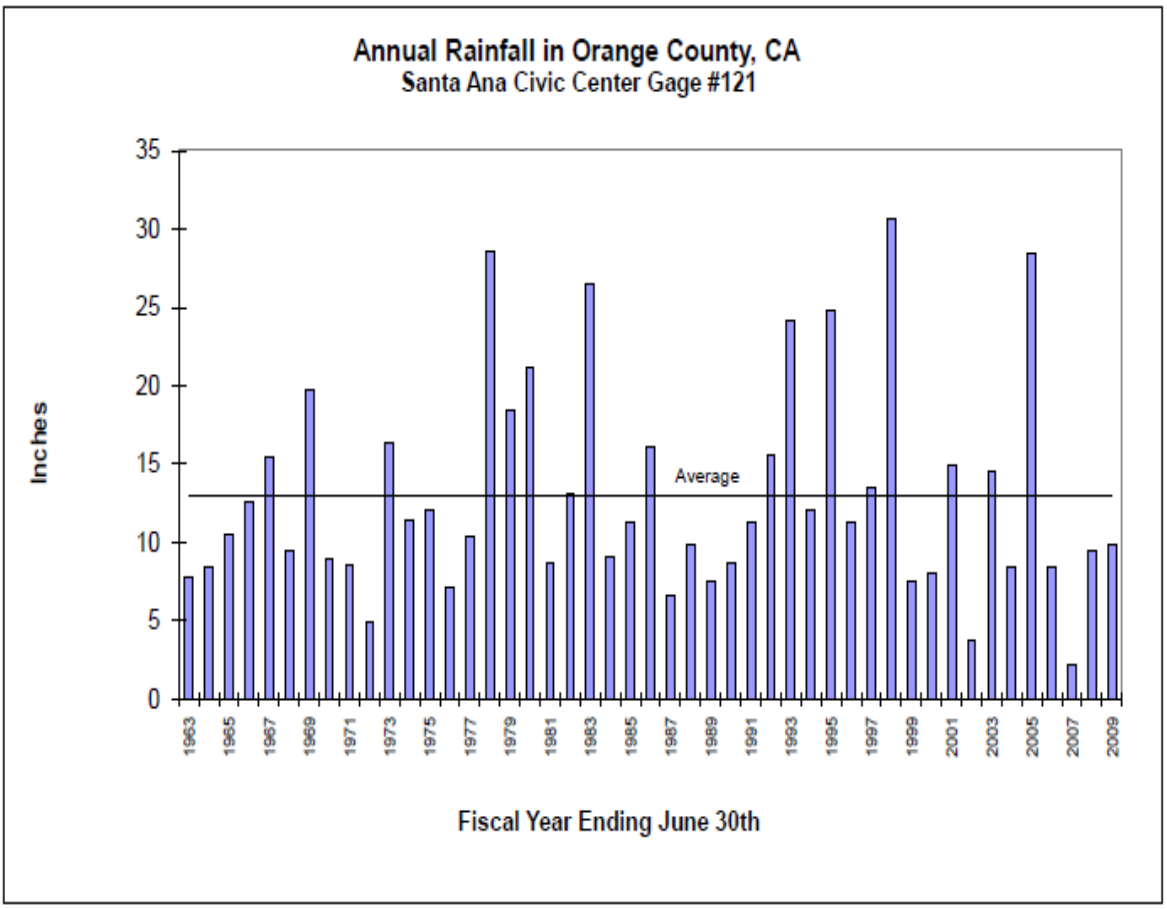
$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n - 1}}$$

where,

s = sample standard deviation
$\sum$ = sum of...
$\bar{X}$ = sample mean
n = number of scores in sample.

A fifty year study (1963-2012) of annual rainfall in Orange County shows a ***mean*** annual rainfall of 13.0 inches (interestingly, only one year, 1982, actually had this amount of rain). The ***standard deviation*** for this period is calculated to be 6.7 inches. This would result in **normal** rainfall ranging from 6.3 – 19.7 inches.

FY Ending	Rainfall (inches)
1963	7.78
1964	8.38
1965	10.56
1966	12.56
1967	15.41
1968	9.42
1969	19.71
1970	9.01
1971	8.60
1972	4.88
1973	16.30
1974	11.46
1975	12.08
1976	7.18
1977	10.42
1978	28.52
1979	18.47
1980	21.20
1981	8.76
1982	13.05
1983	26.55
1984	9.08
1985	11.30
1986	16.09
1987	6.58
1988	9.87
1989	7.46
1990	8.65
1991	11.31
1992	15.56
1993	24.12
1994	12.06
1995	24.76
1996	11.33
1997	13.53
1998	30.59
1999	7.56
2000	8.06
2001	14.87
2002	3.82
2003	14.57
2004	8.41
2005	28.44
2006	8.50
2007	2.19
2008	9.45
2009	9.88



average 12.94 inches 1963 thru 2009

prepared by Municipal Water District of Orange County 4/13/2010

Data from 1962-2009. Not included in the table, but included in the calculation of mean and standard deviation, are totals from 2010 (16.8 inches), 2011 (21.4 inches,) and 2012 (8.3 inches as of 6/15/12). Note: the yearly rainfall at the Santa Ana Civic Center varies slightly from Banning Ranch, however this should not significantly affect the calculation of the mean, nor the standard deviation.

In conclusion, while the rainfall total for 2010/2011 might be considered to be just outside the range of normal, the rainfall total for 2009/2010 is well within the range of normal and any observations from 2009/2010 should be considered from a year of normal rainfall in calculating the hydrology parameter.

B. Draft EIR's track record of inclusiveness of data is suspect.

The dEIR's failure to conduct listed fairy shrimp surveys on half (27 of 54) of the vernal pools/seasonal wetlands of the Banning Ranch mesa casts a dark shadow not only on the completeness of the dEIR's data, but on the forthrightness and intentions of its authors. Though the dEIR attempts to rationalize this omission by claiming (in retrospect) that the omitted 27 vernal pools/seasonal wetlands are "oil field features that only ponded during the extreme rainfall year of either 2009/2010 or 2010/2011" a review of the sequence of events suggests that this data was intentionally not gathered to keep the public from becoming aware of these vernal pools/seasonal wetlands. In the following chronological sequence, the vernal pools/seasonal wetlands are divided, *for simplicity's sake*, into two groups…**The Original 27** and **The Additional 27**.

Chronological sequence of events

Early 2010 Banning Ranch Conservancy presents data from model airplanes, taken during the 2009/2010 wet season, demonstrating vernal pools/seasonal wetlands in the middle mesa area (roughly bordered by 16th Street and 17th Street). The data is presented to NBR as well as the regulatory agencies, including the lead agency (City of Newport Beach).

Early 2011 Banning Ranch Conservancy presents additional data from model airplanes, taken during the 2010/2011 wet season, demonstrating vernal pools/seasonal wetlands in the middle mesa area. This data is presented to NBR, and the regulatory agencies, including the lead agency (Newport Beach). By this time the number of vernal pools/seasonal wetlands (most of which are located in the middle mesa area roughly bordered by 16th Street and 17th Street, but also including a handful of vernal pools/seasonal wetlands located on the peripheral portions of the Banning Ranch mesa) known to the public, including the Banning Ranch Conservancy, is approximately 27 (**aka "The Original 27"**).

May-August 2011 Banning Ranch Conservancy becomes aware, through ground photographs taken earlier and later provided to the Banning Ranch Conservancy, of the presence of approximately 27 additional vernal pools/seasonal wetlands (aka "**The Additional 27"**). Most of these additional vernal pools/seasonal wetlands are located on the peripheral portions of the Banning Ranch mesa and are not easily visible from the

model airplane photos described above. By this time (May 2011) all of the vernal pools/seasonal wetlands on the Banning Ranch mesa have dried up. A summary of **The Additional 27** vernal pools/seasonal wetlands, along with **The Original 27** vernal pools/seasonal wetlands, is prepared on a DVD, called, "*The Complete Banning Ranch Mesa Vernal Pools/Wetlands, First Edition 6/27/11."* This DVD is made available to the regulatory agencies including the lead agency (City of Newport Beach).

August 2011 Banning Ranch Conservancy obtains a copy of the 2010/2011 Banning Ranch wet-season brachiopod report by David Moscovitz of Glenn Lukos Associates (GLA), dated 7/26/11. This report includes data collected from October 2010 - April 2011. The report is largely limited to **The Original 27** vernal pools/seasonal wetlands. None of **The Additional 27** vernal pools/seasonal wetlands are included in the survey.

August 2011 The fact that the 2010/2011 wet-season branchiopod report, dated 7/26/11, lacks data from **The Additional 27** vernal pools/seasonal wetlands (and hence must be considered incomplete) was made known to NBR, and the regulatory agencies, including the lead agency (City of Newport Beach).

September 2011 Despite the lead agency (City of Newport Beach) being aware of the incompleteness of the wet-season branchiopod report (and the necessity of additional studies), the dEIR for the proposed Banning Ranch development is released for public comments.

Conclusions from the chronological sequence of events:

The authors of the dEIR, in a retrospective attempt to rationalize the knowing omission of **The Additional 27** vernal pools/seasonal wetlands from the wet-season branchiopod report, imply that a decision was made not to survey **The Additional 27** vernal pools/seasonal wetlands because they were "oil field features." However, the evidence suggests that the real reason for the omission, perhaps not thinking that the public would ever know better, was to keep **The Additional 27** vernal pools/seasonal wetlands from becoming part of the public record. **The Additional 27** vernal pools/seasonal wetlands are largely of similar quality and not wholly different from **The Original 27** vernal pools/seasonal wetlands**. The Additional 27** vernal pools/seasonal wetlands were certainly present when the 2010/2011 wet season branchiopod surveys were conducted.

This conscious attempt to withhold data puts into question the dEIR's claims that these vernal pools/seasonal wetlands did not pond in during the 2007/2008 and 2008/2009 wet seasons. The fact that some of the vernal pools/seasonal wetlands ponded in 2011/2012 (a season drier than either 2007/2008 or 2008/2009) raises further doubts about the dEIR's claims.

Date 4/15/12. Ponding of #12, #16, and #20 from Spring, 2012. All three demonstrated versatile fairy shrimp in the 2010/2011 wet season survey.

Date 4/15/12. Ponding of #50 from Spring 2012 (referred to as #47 in the DVD *Complete Banning Ranch Mesa Vernal Pools/Wetlands*). No known fairy shrimp surveys have been performed on #50.

But as we shall see in the following section, ponding is not necessary to establish wetland hydrology.

C. Wetland hydrology does not require ponding.

Time and time again the dEIR attempts to exclude nearly all the vernal pools/seasonal wetlands by claiming that they failed to meet the hydrology parameter because they did not exhibit ponding during most years. Again, the dEIR attempts to gain its authority from page 95 of the **2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual**: **Arid West Region (Version 2.0**), which states,

*Direct hydrologic observations. Verify that the plant community occurs in an area subject to prolonged inundation or soil saturation during the growing season. This can be done by visiting the site at 2- to 3-day intervals during the portion of the growing season when surface water is most likely to be present or water tables are normally high. Hydrophytic vegetation is considered to be present, and the site is a wetland, if surface water is present and/**or the water table is 12 in. (30 cm) or less from the surface** for 14 or more consecutive days during the growing season during a period when antecedent precipitation has been normal or drier than normal. If necessary, microtopographic highs and lows should be evaluated separately. The normality of the current year's rainfall must be considered in interpreting field results, as well as the likelihood that wet conditions will occur on the site at least every other year.*

The key to establishing wetland hydrology is the presence, in most years, of saturated soil within 12 inches of the surface (not necessarily surface ponding). While prolonged ponding is surely evidence that the soils are saturated, an area that exhibits periodic ponding can't be excluded as having wetland hydrology unless soil samples of at least 12 inches depth are taken at 2-3 day intervals during the growing season. Admittedly, this is a very great and cumbersome amount of data to obtain (for either the developer or the environmentalist), and it is for this reason that decisions on wetland determination usually focus on wetland indicators such as vegetation and soil idicators. As Lewis M. Cowardin of the USFWS said in 1995, "The authors of the USFWS wetland classification maintained that **it is neither reasonable nor practicable to establish a quantitative hydrologic criterion** for field identification for wetlands. We still believe that, in the great majority of cases, wetlands should be identified by vegetation and soils. We argue that hydrology should be used only where soil and vegetation criteria cannot reasonably be applied, such as highly disturbed wetlands…."

5. Protocol fairy shrimp surveys on the Additional 27 Vernal Pools/Seasonal Wetlands will likely yield positive results.

The Banning Ranch Conservancy has identified 54 documented or potential vernal pools/seasonal wetlands on Banning Ranch (all but one on the mesa). For details and photos, go to

http://banningranchconservancy.org/Vernal-Pools.html

Of these 54, twenty-seven vernal pools/seasonal wetlands 27 have never even had one fairy shrimp survey.

Of the 27 vernal pools/seasonal wetlands that have been surveyed (most with only one wet-season survey), twenty (20) have been documented as having fairy shrimp, including seven (7) having the listed San Diego fairy shrimp. In other words, 74% of the surveyed vernal pools/seasonal wetlands have fairy shrimp and 26% have the listed San Diego fairy shrimp.

There is no difference in the quality of the vernal pools/seasonal wetlands that have been surveyed vs. those which have not been surveyed. There is no reason to think that the un-surveyed group will have different rates of listed and non-listed fairy shrimp compared to the surveyed group.

Though these vernal pools/seasonal wetlands are now in an oil field (as opposed to a pristine coastal mesa), they are still functioning ecosystems that need, at a bare minimum, to be subjected to the required protocol studies. Protocol studies must follow the USFWS guidelines that call for, among other things,

c. A complete survey consists of sampling for either:

1. two full wet season surveys done within a 5-year period; or

2. two consecutive seasons of one full wet season survey and one dry season survey (or one dry season survey and one full wet season survey).

6. Full Wetland Delineation studies have only been done on three of the 54 vernal pools/seasonal wetlands of the Banning Ranch mesa

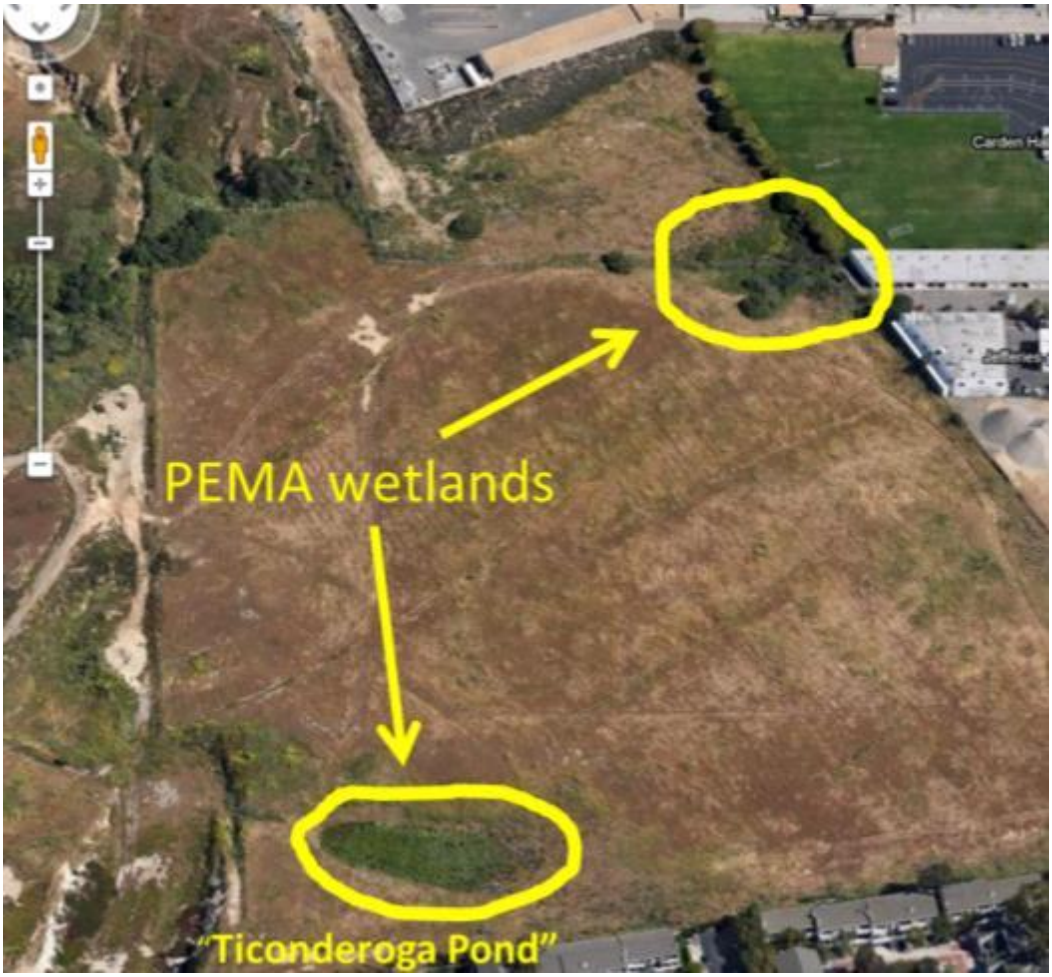
With minor exception, wetland delineation studies were not performed on any of the vernal

pools/seasonal wetlands of the Banning Ranch mesa. Only vernal pools/seasonal wetlands #1 (VP1) and #2 (VP2) (referred to as Soil Test Pits #15 and #16) and vernal pool/seasonal wetland #54 (referred to as Soil Test Pit #47, or Drainage D) received such studies.

The results are as follows (from Biological Resources Appendage E, part 4 of the dEIR):

Soil Test Pit	Location	Plant species	Common Name	Absolute Percent Cover	Wetland Indicator Status[a]	Passed Dominance Test	Passed Prevalence Test	Meets Hydrophytic Vegetation Criteria	Meets Hydric Soils Criteria	Meets Wetlands hydrology Criteria
15	Vernal Pool aka VP1	*Baccharis salicifolia (viminea)*	Mule Fat	10	FACW	Yes	Yes	Yes	Yes	Yes
		Distichlis spicata	Salt Grass	90	FACW					
		Eremocarpus setigerus	Turkey Mullein	<1	UPL					
		Polypogon monspeliensis	Annual Beard Grass	<1	FACW					
		Heliotropium curassavicum	Salt Heliotrope	<1	OBL					
16	Vernal Pool aka VP2	*Baccharis salicifolia (viminea)*	Mule Fat	5	FACW	Yes	Yes	Yes	Yes	Yes
		Frankenia salina	Alkali Heath	80	FACW					
		Rumex crispus	Curly Dock	<1	FACW					
		Hemizonia fasciculata	Fascicled Tarweed	2	UPL					
		Polypogon monspeliensis	Annual Beard Grass	<1	FACW					
47	Drainage D	*Salix lasiolepis*	Arroyo Willow	90	FACW	Yes	Yes	Yes	No	Yes
		Carpobrotus edulis	Hottentot Fig	20	UPL					

Also, while the dEIR maps vernal pool/seasonal wetland #31 (referred to as #29 in *The Complete Banning Ranch Mesa Vernal Pools/Wetlands,* and described as "W" in the 2010/2011 Banning Ranch wet-season branchiopod report by GLA) as well as a similar feature near Carden Hall School, as Palustrine Emergent (PEMA) wetlands, the dEIR failed to do wetland delineation studies, claiming they do not "presently exhibit wetland characteristics." This is surprising, considering local residents have, for years (though it doesn't pond every year), been referring to vernal pool/seasonal wetland #31 as, "Ticonderoga Pond."



Palustrine Emergent (PEMA) wetlands , including vernal pool/seasonal wetland #31 (akaTiconderoga Pond) which were mapped but not subjected to wetland delineation studies.

"Ticonderoga Pond" (aka vernal pool/seasonal wetland #31). Photo from 12/30/10.

a. Vegetation Studies are lacking

It should be noted that the dEIR is (with minor exception) extremely deficient in describing the specific vegetation in all of the vernal pools/seasonal wetlands studied. For example, in the fairy shrimp surveys the authors simply describe the vegetation in broad strokes such as, "Disturbed," or "Non-Native Grassland." One exception would be Vernal Pool/Seasonal Wetland #1 (aka VP1), where the dEIR authors do mention the occurrence of "*vegetation typical of vernal pools,"* (specified in an earlier 2000 GLA report as dwarf woolly heads, water pigmy weed, and waterfern)

http://banningranchconservancy.org/pdf/vpools/vernalpoolsurvey10-18-2000.pdf

The authors of the dEIR add that VP1 is, "*dominated by mulefat and saltgrass.*" It should be emphasized that the presence of mulefat and saltgrass (both considered FACW in the National Wetland Plan List) is indicative of hydrophytic vegetation.

Otherwise, specific vegetation surveys of the vernal pools/seasonal wetlands are essentially absent.

b. Hydric Soil studies are lacking

Again, other than a minor exception involving vernal pools/seasonal wetlands #1, #2, and #54, no specific studies of hydric soil indicators has been undertaken in any of the 54 vernal pools/seasonal wetlands on the Banning Ranch mesa. In the case of vernal pools/seasonal wetlands #1 and #2, the hydric soil indicator criteria was met for both #1 and #2 with prominent mottles characteristic of "redox depressions"(Hydric soil indicator F8) and they were both classified as "vernal pools" (Hydric soil indicator F9).

c. Importance of Fauna

In the case of vernal pools, fauna can also be used as indicators, and their use is essential in establishing the presence of vernal pools and seasonal wetlands. Federally-listed species such as the San Diego fairy shrimp are well described as indicator species for vernal pool determination, while other fairy shrimp, such as the versatile fairy shrimp, have a strong association with vernal pools and can be, in some cases, considered indicators (California Department of Fish and Game list of Vernal Pool Flora and Fauna).

http://www.cramwetlands.org/documents/Vernal%20Pool%20CRAM%206.0%20Appendix%201%202012-02-29.pdf

The presence of fairy shrimp, ostracods and other aquatic invertebrates are also considered to be primary Wetland Hydrology Indicators (B13) that meet the Hydrology criteria used in establishing wetland presence.

The authors of the dEIR, perhaps in an attempt to dismiss the wide distribution of the branchiopods in the vernal pools/seasonal wetlands of the Banning Ranch mesa, put forward that, "Fairy shrimp of their cysts can be transported from one ponded area to another by water fowl, car tires, or the bottom of animal and human feet." This statement distracts from the fact that fairy shrimp (both San Diego and versatile) are considered to be vernal pool "obligates" that spend their entire life cycles in one vernal pool (ET Bauder, *et al).*

http://www.bio.sdsu.edu/pub/andy/vernalpools/index.html.

The presence of adults assumes that cysts from a previous year were present in the same location, which, in turn, assumes that adults from a previous generation were present prior to this, and so on…..

Other fauna such as Ostracods (seed shrimp), Cladocera (water fleas), and pollywogs, all of which have been unofficially documented on the Banning Ranch mesa, are also associated with vernal pools/seasonal wetlands.

The fact that these species have adapted, over thousands of years, to the arid climate, and years of drought, of the Southern California coastal ecosystem, cannot be overemphasized. Fairy shrimp cysts have been reported to be able to survive a decade or more. The Banning Ranch mesa vernal pools/wetlands can go several years without ponding or even soil saturation and still be considered important ecosystems worthy of preserving if for no other reason than they are the only remnants of this ecosystem.

7. Conclusions

Protocol fairy shrimp studies should be performed on all vernal pools/seasonal wetlands of the Banning Ranch mesa. There is a very strong possibility that **The Additional 27** vernal pools/seasonal wetlands will show similar results as **The Original 27** after protocol studies. And most of **The Original 27** need another round of surveys to adequately exclude the San Diego fairy shrimp consistent with USFWS guidelines. So far only four vernal pools/seasonal wetlands (#3, #5, #29, and #32) have been satisfactorily excluded for the San Diego fairy shrimp.

Please see table at the end of this report describing the fairy shrimp survey results for each vernal pool/seasonal wetland of the Banning Ranch mesa.

In addition, full wetland delineation studies, including evaluation for field indicators of wetland hydrology, hydric soils, and hydrophytic vegetation, should be performed on the remaining 51 vernal pools/seasonal wetlands of the Banning Ranch mesa. It should be emphasized that VP2 is typical of the more disturbed vernal pools/seasonal wetlands of the Banning Ranch mesa in that it occurs near a service road and near oil well pads *yet it still meets all three criteria (wetland hydrology, hydric soil, and hydrophytic vegetation) for establishment of wetland presence.* If VP2 meets all three criteria, then there is a very good chance that most of the other vernal pools/seasonal wetlands of the Banning Ranch mesa would do the same. So far, three of the vernal pools/seasonal wetlands (#1, #2 and #54) have met the criteria for wetland presence and <u>none</u> of the remaining 51 have been studied or have been excluded as wetlands.

Special focused efforts will be needed in cases where the vernal pools/seasonal wetlands have been intentionally disturbed.

Vernal Pool/Seasonal Wetland #23 before and after disturbance

Watersheds for these Vernal Pools/Seasonal Wetlands must also be identified and protected. Although vernal pools/seasonal wetlands acquire most of their water from direct precipitation, adequate watersheds, with appropriate buffers, will also have to be established.

8. Chart of fairy shrimp survey results.

	Banning Ranch Conservancy (Nomenclature (from *Complete Banning Ranch Mesa Vernal Pools/ Wetlands*)	Glenn Lukos Associates (GLA) nomenclature	1st wet season survey results (all 2011 unless specified)	2nd wet season survey results	Dry season results	San Diego Fairy Shrimp excluded per protocol (Two wet season surveys or one wet season and one dry season survey by certified biologist)
1	1	VP1	San Diego (2000)			N/A
2	2	VP2	San Diego (2000)			N/A
3	3	D	Versatile (2000)	No shrimp (2011)		Yes
4	4	C	Versatile			No
5	5	B	Versatile (2010)	Versatile (2011)		Yes
6	6	School Property				No
7	7	F	No shrimp			No
8	8	I	San Diego			N/A
9	9	J	San Diego			N/A
10	10	K	No shrimp			No
11	11	M	Versatile			No
12	12	P	Versatile			No
13	13	R	Versatile			No
14	14	H	No shrimp			No
15	15	L	No shrimp			No
16	16	N	Versatile			No
17	17	E	San Diego			N/A
18	18	O	No shrimp			No
19	19	Q				No
20	20	T	Versatile			No
21	21	S				No
22	22	U				No
23	23					No
24	24a	Depression 2 (2000)	Versatile (2000)			No
25	24b	Depression 3 (2000)	Versatile (2000)			No
26	25					No
27	26					No
28	27	Depression 1 (2000)	Versatile (2000)			No
29	28a	V	Versatile (2010)	No shrimp (2011)		Yes
30	28b					No
31	29	W	No shrimp			No

32	30a	A	Versatile (2008)	Versatile (2009)		Yes
33	30b					No
34	31					No
35	32	AD3	San Diego			N/A
36	33					No
37	34					No
38	35					No
40	37					No
41	38					No
42	39					No
43	40					No
44	41					No
45	42					No
46	43					No
47	44					No
48	45					No
49	46	G	San Diego			N/A
50	47					No
51	48					No
52	49a					No
53	49b					No
54						No

Notes on Vernal Pools/Seasonal Wetlands

6. Though there is no fence, and the vernal pool/seasonal wetland almost straddles the property line, #6 is technically located on adjacent Newport Mesa Unified School District Property

35. Referred to as AD3 in the 2010/2011 GLA study, this vernal pool/seasonal wetland was not mentioned in the *Complete Banning Ranch Mesa Vernal Pools/ Wetlands.* It was subsequently placed in slot 32.

49. Referred to as G in the 2010/2011 GLA study, this vernal pool/seasonal wetland was not mentioned in the *Complete Banning Ranch Mesa Vernal Pools/ Wetlands.* It was subsequently placed in slot 46.

54. This wetland was not mentioned in the the *Complete Banning Ranch Mesa Vernal Pools/ Wetlands* but was described as “Drainage D” in the dEIR. It now occupies slot 54.